

Mukaida, et al. describes a water absorbent composition comprising 100 parts by weight of water absorbing polymer particles and 0.5 to 30 parts of a resin powder having heat adhesion property at 50-2000°C. Also disclosed are water absorbing materials and products using the water absorbing material comprising 1) water absorbing polymer particles, 2) a resin having heat adhesion property at 50-200° and 3) fibrous material, wherein the water absorbing polymer particles are adhered to the fibrous material through the resin by heat treatment at temperatures exceeding the temperatures exhibited by the heat adhesion property of the resin.

Said another way, Wang attaches a modification polymer to absorbent gelling particles that is intended to have an electrostatic interaction with an acidic group in the absorbent polymer and/or in the urine, in order to enhance the connection between the absorbent materials and the absorbed urine. Mukaida uses a resin powder as "glue" to attach absorbent gelling particles to a fibrous material. In the instant claims, as amended, a polycationic polymer is bonded to absorbent gelling particles and then the absorbent gelling particles are adhered to a carrier layer via meltblown "glue microfibers". The question is then clear: would the use of a resin powder as "glue" make obvious the use of the "glue microfibers". Applicant contends that the answer to this question is "no", because the "glue microfibers" were chosen to provide functions of which the resin powder is not capable. As the title of the application indicates, the goal of the instant application is materials with improved structural stability in dry and wet states. The resin powder of Mukaida would adhere the absorbent particles to the material, but the longer shape of the instant meltblown "glue microfibers" would result in a larger surface (of the microfiber itself) being adhered to the carrier layer. The use of the "glue microfibers" as both 1) glue to maintain placement of the absorbent gelling particles and 2) as a structural element to provide stability is not contemplated by either reference nor, if one were to combine these references, would such a structure be created.

The Examiner admits "Neither of these references (Wang or Mukaida) seam (sic) to teach utilizing said 'glues and binders' in the form of fibers. Mukaida only teaches using said resin in the form of particles up to 300 microns in size. The Examiner previously stated that it is extremely common and well known in the art to utilize microfibers as binders. In support of this position, the Examiner cited Early. In further support of this position, the Examiner now cites Minto."

Minto describes a method of making a non-woven web of meltblown polymeric fibres wherein the meltblown fibers have absorbent particles introduced into the stream of

microfibres after the microfibres have been extruded. The absorbent particles are directed into the stream of microfibres whilst the fibres are in a tacky state so that the particles adhere to the fibres.

The microfibres of Minto do have absorbent particles adhered to them while the microfibres are in a tacky state, however, the cited microfibres are then formed into a non-woven web. The Minto web has a relatively small amount of absorbent particles in relation to the amount of microfibres (see Figures). The absorbent particles of Minto are selected from clay, kaolin, talc, calcium carbonate, sodium sulphate, sodium carbonate, aluminum oxide or "organic materials such as sponge particles (see bottom of page 3 and top of page 4). There is no contemplation of the adherence of the water absorbent hydrogel-forming polymers of the instant invention, nor of the "gel-blocking" phenomena which requires that the water absorbent hydrogel-forming polymers be separated during absorbency. On the other hand, the glue microfibres of the instant application are not formed into a web. Sufficient microfibers are used only to adhere the water absorbent hydrogel-forming polymers to the carrier layer. There is no teaching of using microfibers to adhere to a carrier nor any motivation to combine solving two different problems with one solution.

It is common knowledge in the art that many melt blown polymeric fibres are tacky during manufacture. Due to this tackiness, the microfibers of Minto, capture the absorbent particles as they are blown through, however, the Minto microfibres do not serve to adhere the particles to another substrate. Additionally, the "absorbent particles" of the citation have a diameter of 1 micron or less up to 100 microns, while the absorbent material of the instant application (see example at page 20) typically has a particle size distribution ranging from 300 microns to 600 microns (see page 4, lines 9-11). The essence of the instant invention is not merely the use of microfibers as glue to adhere water absorbent hydrogel forming polymers but rather that these microfibers perform a dual function, i.e., they not only keep the absorbent gelling particles from shifting position, but they also add stability to the article. There is nothing in Minto which would lead one of skill in the art to the instant structures.

In addition, Applicant submits that the combined disclosure of Wang, Mukaida, and Minto would not obviously lead the skilled artisan to a realization of Applicants' invention. If one of skill in the art were given the citations and instructed to combine them, the microfibre webs of Minto might be loaded with the absorbent gelling particles of Wang—however such structures are not the structures of the instant application. The

addition of Mukaida might result in the use of a resin powder to ensure adhesion of the absorbent gelling particles to the Minto microfibre webs, as the resin of Mukaida is used to adhere the absorbent gelling particles to a fibrous substance, but there is no suggestion of a carrier layer.

The MPEP states, "In establishing a *prima facie* case of obviousness, three basic criteria are to be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally the prior art reference (or references when combined) must teach or suggest all the claim limitations." Applicant asserts that these criteria are not met by the references combined by the Examiner.

The Examiner further cites Early. Early discloses a web comprising at least 50% hydrophilic microfibers. Applicant is not contesting the fact that hydrophilic microfibers can produce an absorbent web. However, the microfibers of the instant application are not used to produce a web.

Lastly, the Examiner asserts that, in combination with the references above, Anjur renders the instant invention obvious. However, as Applicant has stated before, the styrene-isoprene-styrene fibers used in the cited absorbent structure are 1) not microfibers, 2) have not been subjected to treatment to render them tacky. Therefore, the styrene-isoprene-styrene fibers of Anjur would not function as do the instant microfibers.

No combination of these references would lead one of skill in the art to produce the instant structures. Absorbent gelling materials are glued to a substrate in Mukaida but the powdered resin used is 1) not the glue microfibers of the instant application and 2) would not contribute to the wet and dry stability of the article. Minto uses a microfiber web to hold absorbent particles but 1) they are not absorbent gelling materials, are much smaller than the instant absorbent materials and would not create gel blocking as would absorbent gelling materials and 2) while the absorbent particles are attached to the microfibers, the microfibers do not serve to attach the particles to anything else. In light of the citations, the instant invention is obvious only in hindsight.

The Federal Circuit in *In re Fritch* 972 F2d 1260, 23 USPQ2d 1780 (Fed.Cir. 1992) noted that "it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious....This court has previously stated that [o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to

deprecate the claimed invention. Applicant respectfully suggests that the Examiner is, in this case, using hindsight reconstruction and, following a reading of the instant specification, has chosen five references which disclose various isolated elements of the instant invention to render the instant application obvious.

### CONCLUSION

For the foregoing reasons, Applicants respectfully submit that this applied reference combination does not render Claims 1-19 and 39-41 unpatentably obvious under 35 U.S.C. 103. The rejection of these claims should be withdrawn. Accordingly, favorable reconsideration of Claims 1-19 and 39-41 is earnestly solicited in the form of a Notice of Allowance.

Should any issues regarding this Application remain unresolved, the Examiner is encouraged to contact the undersigned by telephone at the earliest possible date to achieve a timely resolution.

Respectfully submitted

FOR: E. REZAI ET AL.

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## VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

1. An absorbent material comprising:
  - (a) absorbent gelling particles comprising a water-insoluble absorbent hydrogel forming polymer;
  - (b) a polycationic polymer;
  - (c) from about 1% to about 10% of glue microfibers selected from the group consisting of:
    - (i) tackifier modified polymers;
    - (ii) pressure sensitive adhesives, and
    - (iii) mixtures thereof;
  - (d) a carrier layer;wherein the polycationic polymer is bonded to the absorbent gelling particles; and wherein the absorbent gelling particles, deposited onto the carrier layer, are fixed to the surface of the carrier layer by the glue microfibers and wherein the glue microfibers are meltblown fibers.